REMARKS

Claims 1-5, 7-11, 13-16, and 21-32 are pending. Claims 1-5, 7-11, 13-16 and 21-32 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 6,363,378 to Conklin, in view of U.S. Patent No. 5,390,281 to Luciw, U.S. Patent 6,078,953 to Vaid, and U.S. Patent No. 6,513,031 B1 to Fries et al. Claims 1-5, 7-11, 13-16 and 21-32 stand provisionally rejected under the judicially created doctrine of obviousness-type double patenting over U.S. Patent Application No. 09/653,713 in view of Conklin, Luciw, Vaid, and Fries. Claims 1-5, 7-11, 13-16 and 21-32 stand provisionally rejected under the judicially created doctrine of obviousness-type double patenting over U.S. Patent Application No. 09/512,963 in view of Conklin, Luciw, Vaid, and Fries.

Reconsideration is requested. The rejections are traversed. No new matter is added. The Specification is amended. Claims 1, 7, 13, 25, and 30 are amended. Claims 1-5, 7-11, 13-16, and 21-32 remain in the case for consideration.

AMENDMENTS TO THE SPECIFICATION

The specification has been amended to include material from U.S. Patent Application No. 09/653,713, titled "INTENTIONAL-STANCE CHARACTERIZATION OF A GENERAL CONTENT STREAM OR REPOSITORY" ("Intentional Stance Application"), which has been incorporated by reference on page 1, lines 16-18 of the instant application. These paragraphs provide written description to newly added FIGs. 6 and 7A-7G, which are shown as FIGs. 2 and 3A-3G in the Intentional Stance application.

AMENDMENTS TO THE DRAWINGS

FIGs. 6 and 7A-7G have been added to the present application. FIG. 6 is the same as FIG. 2 in the Intentional Stance application, and FIGs. 7A-7G are the same as FIGs. 3A-3G from the Intentional Stance Application.

REJECTION UNDER 35 U.S.C. § 103(a)

Referring to claim 1, the invention is directed towards a computer-implemented method for enforcing policy over a computer network, the method comprising: selecting a dictionary, the

dictionary including a plurality of concepts organized as a directed set, exactly one concept identified as a maximal element, and for each concept in the directed set, at least one chain connecting the maximal element to the concept; selecting a set of chains to form a basis spanning a topological vector space; selecting at least one concept in the dictionary; creating a state vector in the topological vector space for each of the selected concepts, wherein each state vector includes at least one measure of how concretely the concept is represented in each chain in the basis; assembling a first subset of the state vectors in the topological vector space into a template, the topological vector space including at least one state vector not in the template; assigning a policy to the computer network; monitoring a content stream on the computer network to construct an impact summary including a second subset of the state vectors in the topological vector space; and enforcing the policy when the impact summary is within a threshold distance of the template.

Referring to claim 7, the invention is directed towards a computer-readable medium containing a program operable on a computer to enforce policy over a computer network, the program comprising: selection software to select a dictionary, the dictionary including a plurality of concepts organized as a directed set, exactly one concept identified as a maximal element, and for each concept in the directed set, at least one chain connecting the maximal element to the concept; selection software to select a set of chains to form a basis spanning a topological vector space; selection software to select at least one concept in the dictionary; creation software to create a state vector in the topological vector space for each of the selected concepts, wherein each state vector includes as its components measures of how concretely the concept is represented in each chain in the basis; definition software to define a template, the template including a first subset of state vectors in the topological vector space, the topological vector space including at least one state vector not in the template; assignment software to assign a policy to the computer network; monitoring software to monitor a content stream on the computer network to construct an impact summary including a second subset of the state vectors in the topological vector space; and enforcement software to enforce the policy when the impact summary is within a threshold distance of the template.

Referring to claim 13, the invention is directed towards an apparatus for enforcing policy over a computer network, the apparatus comprising: a computer; a directed set stored in the computer including a plurality of concepts, exactly one concept identified as a maximal element,

and for each concept in the directed set, at least one chain extending from the maximal element to the concept; a basis spanning a topological vector space including a subset of the plurality of chains; for at least one concept in the directed set, a state vector in the topological vector space, wherein each state vector includes at least one measure of how concretely the concept is represented in each chain in the basis; a template stored in the computer, the template including a first subset of the state vectors in the topological vector space, the topological vector space including at least one vector not in the template; a policy associated with the template; a monitor installed in the computer adapted to monitor a content stream in the computer network to construct an impact summary including a second subset of the state vectors in the topological vector space; and a policy enforcer adapted to enforce the policy when the monitor determines the impact summary to be within a threshold distance of the template.

Claims 1, 7, and 13 all recite a dictionary including a plurality of concepts organized as a directed set, with exactly one concept identified as a maximal element. In contrast Conklin teaches a ranking of query feedback terms in an information retrieval system. The Examiner argues that Conklin teaches a knowledge base organized as a directed graph and that a knowledge base organized as a directed graph teaches a dictionary organized as a directed set.

In the Office Action dated February 10, 2006, the Examiner argues that while it is not a requirement for a directed graph to have exactly one maximal element, it is a possibility, and this possibility satisfies the requirement to show the directed set feature being taught by Conklin. But as argued previously, Conklin does not teach or suggest a requirement that the dictionary be organized as a directed set with exactly one maximal element. In fact, Conklin shows otherwise, in FIGs. 3 and 6. Even if a directed graph could be a directed set, it is not inherently a directed set. FIG. 3 shows that Conklin does not consider the knowledge base to need to be a directed graph, as the two ontologies are unconnected. So Conklin teaches away from even a directed graph, let alone a directed set. The Examiner is impermissibly using hindsight to argue that the knowledge base in Conklin might be a directed set with a single maximal element. MPEP § 2141 II(C) states, "[t]he references must be viewed without the benefit of impermissible hindsight." Because Conklin does not teach or suggest using a knowledge base organized as a directed set with a single maximal element and in fact shows otherwise, it is improper to cite to Conklin as teaching this feature.

The Examiner also argues that because claims 1, 7, and 13 all use the "open-ended language of 'comprising' it is not proper to treat the limit of "exactly one maximal element" as a limiting feature of the claims. (Office Action dated February 10, 2006, pages 11-12). The Examiner argues that there could be multiple dictionaries, thus no longer reciting a dictionary with a single maximal element. But this ignores the fact that the chains connect the maximal element with the other concepts. With multiple dictionaries, the chains would not connect each concept to the maximal element, and thereby constitute a basis.

In addition, neither Luciw, Fries, nor Vaid teach or suggest a dictionary organized as a directed set where a single element is a maximal element to all other concepts. The Examiner has not cited these references as teaching this feature, and the Applicant does not believe these references teach a dictionary organized as a directed set with a single maximal element.

Claims 1, 7, and 13 also recite "for each concept in the directed set, at least one chain connecting the maximal element to the concept". This language clarifies that chains are used to connect each concept in the directed set to the maximal element. Chains are defined in the paragraph added from the Intentional Stance application: "[t]he relationships between concepts can be extended all the way to the maximal element; the hierarchy of such relationships between the maximal element and each concept are called chains."

In order for there to be at least one chain connecting the maximal element to each concept, there must be a maximal element. The Examiner argues that in column 7, lines 39-50, Conklin teaches chains connecting the maximal element to each concept in the directed set. Column 7, lines 39-50 of Conklin describes FIG. 3, which shows an example portion of a knowledge base with two independent ontologies. Because the two ontologies are independent, neither ontology shows a maximal element that exists for all concepts in the knowledge base. Further, FIG. 3 does not show any concept that is connected to all other concepts.

In addition, Luciw, Fries and Vaid also do not teach a dictionary organized as a directed set where each concept in the directed set has at least one chain connecting the maximal element to the concept. The Examiner has not cited to these references as teaching this feature, and the Applicant does not believe any of these references teach at least one chain connecting each concept in a dictionary with the maximal element.

Claims 1, 7, and 13 also recite "selecting a set of chains to form a basis". The concept of a "basis" is a well-defined concept. (*See, e.g.*, STEWART VENIT & WAYNE BISHOP, ELEMENTARY LINEAR ALGEBRA 146 (2d ed. 1985), a copy of which is attached.) Had Conklin intended to teach forming a basis for a subspace, he would have used the term. That he did not use the term "basis" anywhere in his patent makes clear that he does not view his "chains" (undefined as they are) as forming a subspace.

Finally, Luciw, Fries and Vaid also do not teach using chains to form a basis spanning a subspace. The Examiner has not cited to these references as teaching this feature, and the Applicant does not believe any of these references teach a basis spanning a subspace.

Claims 1, 7, and 13 also recite "creating a state vector in the topological vector space for each of the selected concepts, wherein each state vector includes at least one measure of how concretely the concept is represented in each chain in the basis."

The Examiner cites to Conklin's document theme vector discussed in column 4, line 39 to column 5, line 15 as teaching a state vector in a topological vector space measuring how concretely each concept is represented in each chain in the basis. As argued previously, Conklin does not select a set of concepts and form a basis.

Further, in order to measure how concretely a concept is represented in each chain in the basis, there must be a measurement of the distance between multiple vectors. The Examiner argues that Conklin teaches "at least one measure of how concretely the concept is represented in each chain in the basis" when Conklin discusses document theme vectors with parent and descendant weights between column 7, line 62 and column 9, line 26. However, as argued previously, this is only teaching a measurement between parent and descendant nodes in the ontology; Conklin does not teach or suggest measuring the distance between two vectors in a topological vector space. These two forms of measurement are distinct from each other, and one does not teach or suggest the other. Further, the measurement between nodes in Conklin has at best a tangential relationship with the document theme vector. The Examiner is taking two separate concepts of Conklin (i.e., measurement between nodes and the document theme vector) and juxtaposing them in a manner Conklin does not suggest and which appears to the Applicant to be inoperable.

Thus, Conklin's document theme vector is not analogous to the state vectors that are recited in claims 1, 7 and 13. The document theme vector does not represent a measurement between each concept and the selected chains that form a basis. The fact that Conklin teaches a vector of any kind should not be taken to imply that Conklin teaches the particular vector as claimed.

The Examiner has not cited to Luciw, Vaid or Fries as teaching the state vector for each of the selected concepts including at least one measure of how concretely each concept is represented in each chain in the basis. The Applicant similarly does not believe that Luciw, Vaid or Fries teach or suggest the state vector for each of the selected concepts including at least one measure of how concretely each concept is represented in each chain in the basis.

Finally, claims 1, 7, and 13 also recite a template including a "first subset of vectors in a topological vector space including at least one vector not in the template" and monitoring a content stream "to construct an impact summary including a second set of the vectors in the topological vector space for enforcing the policy when the impact summary is within a threshold distance of the template. The Examiner acknowledges that Conklin, Luciw, and Vaid do not teach this feature, and instead cites to Fries.

The Examiner argues on page 10, of the Office Action dated February 10, 2006 that "Fries does indeed disclose a goal vector defined by multiple vectors." First, the Applicant fails to see how Fries's goal vector is "defined by multiple vectors". The goal surfaces might be defined from vectors (this is unclear to the Applicant), but the goal vector itself is defined by features and not those vectors. Further, Fries always compares the goal vector (singular) to the goal spaces. The goal spaces are "represented by equations that define hyper-planes" (Fries, column 21, lines 36-37). Vectors are not defined by equations in the same manner as hyper-planes.

Second, the template and impact summary used in claims 1, 7, and 13 each are more than "a goal vector defined by multiple vectors." In order to construct the template and impact summary as claimed, the dictionary with a single maximal element, chains connecting each concept to the maximal element, and state vectors as claimed are used.

The Examiner has cited to Luciw as teaching a template. However, Luciw does not teach a template comprised of state vectors. The Applicant maintains that Fries, Conklin, and Vaid

also do not teach or suggest a template comprised of state vectors. Thus the concept of a template is not taught either.

As discussed above, Conklin, Fries, Luciw and Vaid individually and in combination fail to teach or suggest a dictionary including a plurality of concepts organized as a directed set with exactly one concept identified as a maximal element, and for each concept in the directed set, at least one chain connecting the maximal element to the concept; selecting a set of chains to form a basis; creating a state vector in a topological vector space for each of the selected concepts, wherein each state vector includes at least one measure of how concretely the concept is represented in each chain in the basis; and assembling a first subset of the state vectors in the topological vector space into a template. Therefore claims 1, 7, and 13 are patentable under 35 U.S.C. §103(a) over Conklin, in view of Luciw, Vaid and Fries. Accordingly, claims 1, 7, and 13 are allowable, as are dependent claims 2-5, 8-11, 14-16, and 21-32.

Claims 21 recites measuring the distance between the impact summary and the template and enforcing the policy if the distance is less than the threshold distance. Claims 23 and 25 are similar. Claim 22 recites using a Hausdorff distance function to measure the distance between the impact summary and the template. Claims 24 and 26 are similar to claim 22. To determine if an impact summary is within a threshold distance form the template, the distance between the impact summary and the template must be measured. As both the template and impact summary are subsets of state vectors in the topological vector space, measuring this distance involves measuring a distance between two vector subsets.

On column 21, line 61-63, Fries teaches a goal vector that is compared to a number of goal surfaces. As Fries uses the singular form "goal vector", Fries compare one goal vector to goal surfaces. Further, as argued above, goal surfaces are not analogous to state vectors. Thus, Fries does not teach how such a comparison between two subsets of vectors would be accomplished.

The Applicant does not see the Examiner citing any references that teach how a distance between one subset of vectors is compared to another subset of vectors. The Examiner argues that Vaid teaches a threshold comparison of numbers, and as such teaches how a distance between one subset of vectors is compared to another subset of vectors. But comparing numbers is different than comparing subsets of vectors. Claims 21, 23, and 25 include a level of

complexity that is not taught by Vaid or any other reference, and is not generalizable from the comparison of two numbers.

Further, in rejecting claims 22, 24, and 26, the Examiner argues that Fries teaches a distance measurement, and thus that the use of the Hausdorff distance function would be obvious. In other words, the Examiner is saying that if any distance function is known, then this particular one would be obvious. The Examiner is therefore arguing that a general principle teaches a specific principle.

The Examiner is essentially arguing that a teaching of a genus makes a species in the genus obvious. MPEP § 2144.08 II states that the "fact that a claimed species or subgenus is encompassed by a prior art genus is not sufficient by itself to establish a *prima facie* case of obviousness. The Hausdorff distance function is a particular distance function. The Hausdorff distance function must be shown in a prior art reference and properly combined with other references to make a prima facie case of obviousness for claims 22, 24, and 26. As no cited reference has taught using the Hausdorff distance function to compare different sets of vectors, the rejection of claims 22, 24, and 26 is inappropriate.

Because none of Conklin, Fries, Vaid and Luciw teach or suggest a distance measurement to measure the distance between two sets of vectors, or specifically the Hausdorff distance function, claims 21-26 are patentable under 35 U.S.C. §103(a) over Conklin, in view of Luciw, Vaid and Fries. Accordingly, claims 21-26 are allowable.

Claims 27-32 describes the impact summary and template as both including at least two state vectors, and that the measurement of the threshold distance between the impact summary and the template is measuring the distance between the two sets of vectors. As argued above, none of Conklin, Fries, Luciw, or Vaid teach or suggest measuring a threshold distance between sets of vectors. Therefore, claims 27-32 are patentable under 35 U.S.C. §103(a) over Conklin, in view of Luciw, Vaid and Fries. Accordingly, claims 27-32 are allowable.

The Applicant respectfully reminds the Examiner that to make a prima facie obviousness rejection, there must be a motivation to combine references. The Applicant does not believe that there is a proper motivation to combine reference. Conklin teaches a ranking of feedback terms in an information retrieval system. In Conklin there is no need or use for either a policy or a

template. The Examiner argues on page 4 of the Office Action dated February 10, 2006, that a motivation to combine Conklin with Luciw "would have been to generate templates, which contain directed information slots to perform a task upon meeting satisfying conditions". However, this simply restates the function of Luciw's templates and does not address why a person skilled in the art would think to combine Luciw with Conklin.

Further, the Examiner's argument on page 5 of the Office Action dated February 10, 2006, that a "motivation to combine Vaid and Fries with Conklin and Luciw would again have been to generate templates which contain directed information slots to perform a task (which task obviously could be the specifically enumerated 'action' of the topological vector space including at least one vector not in the template; assigning a policy to the computer network monitoring a content stream on the computer network; and enforcing the policy when the impact summary is within a threshold distance of the template), upon meeting satisfying condition."

The Examiner appears to be picking and choosing what she suggests could be combined. The Examiner appears to be relying on Luciw solely for the teaching any kind of template, and Vaid solely for the teaching of the monitoring of a network. But this is inappropriate. "[T]he prior art as a whole must be considered. The teachings are to be viewed as they would have been viewed by one of ordinary skill." (*In re Hedges*, 228 U.S.P.Q. 685, 687 (Fed. Cir. 1986)) "'It is impermissible within the framework of section 103 to pick and choose from any one reference only so much of it as will support a given position, to the exclusion of other parts necessary to the full appreciation of what such reference fairly suggests to one of ordinary skill in the art.'" (*Id.* (quoting *In re Wesslau*, 147 U.S.P.Q. 391, 393 (C.C.P.A. 1965))) As Luciw describes more than a template, and Vaid describes more than monitoring a network, the Examiner cannot take that template and the monitoring out of context and add just those features to Conklin and Fries. Such a reading of Luciw, Conklin, Fries, and Vaid would be relying on the Applicant's invention in reviewing the prior art, which is impermissible hindsight.

Finally, the Examiner says that the Applicant does not "clearly point out the patentable novelty which he or she thinks the claims present in view of the state of the art disclosed by the references cited or the objections made. Further, they do not show how the amendments avoid such references or objections" (Office Action dated Feb 10, 2006, page 10). In fact, in this

Response, and the previous Responses to Office Actions, the Applicant has clearly pointed out several features that are not taught or suggested by any of the cited references.

The Applicant has clearly and distinctly pointed to features that are not taught or suggested by the cited references. In addition, the Applicant has shown that the combination of the references results in a combination that is structurally different from claims 1, 7 and 13, and the combination of the prior art is incapable of performing the intended use of the present application. In fact, the combined prior art structure is not capable of performing the intended use for the reasons stated above.

Although the Applicant has discussed the references individually, the Applicant has not attacked the references individually, as argued by the Examiner. Instead, the Applicant has shown how certain claimed features are not taught by any reference. If there are features of the claims that are not taught by any reference, then the combination fails to make obvious the invention.

Finally, the Applicant again asserts that if the Examiner intends to use Ramamurthy to show extrapolation, the Examiner should formally cite to Ramamurthy in the heading of the rejection. The Applicant disagrees with the Examiner's assertion on page 14 of the Office Action dated February 10, 2006 that Ramamurthy is not relied upon. In fact, the Examiner refers to Ramamurthy on page 7 while rejecting claims 5, 11, and 16. Therefore, Ramamurthy should properly be included as being relied upon.

The Applicant hereby renews all other arguments previously made but not herein presented.

DOUBLE PATENTING

Claims 1-5, 7-11, 13-16, and 21-32 are provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-26 of co-pending application no. 09/653,713 in view of Conklin, Luciw, Vaid, and Fries. Claims 1-5, 7-11, 13-16 and 21-32 stand provisionally rejected under the judicially created doctrine of obviousness-type double patenting over U.S. Patent Application No. 09/512,963 in view of Conklin, Luciw, Vaid, and Fries. As the double patenting rejections are provisional, no action will be taken at this time. However, on issuance of the co-pending applications, the Applicant is

open to filing a terminal disclaimer to address the double patenting rejections once no other rejections are present.

For the foregoing reasons, reconsideration and allowance of claims 1-5, 7-11, 13-16, and 21-32 of the application as amended is solicited. The Examiner is encouraged to telephone the undersigned at (503) 222-3613 if it appears that an interview would be helpful in advancing the case.

Respectfully submitted,

MARGER JOHNSON & McCOLLOM, P.C.

Ariel S. Rogson
Reg. No. 43,054

MARGER JOHNSON & McCOLLOM, P.C.
210 SW Morrison Street, Suite 400
Portland, OR 97204
503-222-3613
Customer No. 45842

independent *and* span the subspace are of particular importance in linear algebra. In this section we investigate the characteristics of such sets.

BASIS FOR A SUBSPACE

DEFINITION

Let $\mathbf{S}$ be a subspace of $\mathbf{R}^m$. A set $\mathcal{T}$ of vectors in $\mathbf{S}$ is a **basis** for $\mathbf{S}$ if

i. $\mathcal{T}$ is linearly independent and

ii. $\mathcal{T}$ spans $\mathbf{S}$.

EXAMPLE 4.16

Show that the set of elementary vectors in $\mathbf{R}^m$, $\mathcal{T} = \{\mathbf{e}_1, \mathbf{e}_2, \ldots, \mathbf{e}_m\}$, is a basis for $\mathbf{R}^m$.

By Exercise 29 of Section 4.1, $\mathcal{T}$ is linearly independent. Moreover $\mathcal{T}$ spans $\mathbf{R}^m$ (Example 4.13). Hence $\mathcal{T}$ is a basis for $\mathbf{R}^m$.

NOTE: The basis, $\{\mathbf{e}_1, \mathbf{e}_2, \ldots, \mathbf{e}_m\}$ is called the **standard basis** for $\mathbf{R}^m$.

EXAMPLE 4.17

Show that the set $\mathcal{T} = \{(1, 0, 0), (1, 2, 0), (1, 2, 3)\}$ is a basis for $\mathbf{R}^3$.

We can show that $\mathcal{T}$ is linearly independent and that $\mathcal{T}$ spans $\mathbf{R}^3$ at the same time. Let $\mathbf{w} = (w_1, w_2, w_3)$ be an arbitrary vector in $\mathbf{R}^3$. Then $\mathcal{T}$ spans $\mathbf{R}^3$ if there exist scalars c_1, c_2, c_3 such that

$$c_1(1, 0, 0) + c_2(1, 2, 0) + c_3(1, 2, 3) = (w_1, w_2, w_3).$$

Performing the scalar multiplications and equating corresponding components yields the linear system

$$\begin{aligned} c_1 + c_2 + c_3 &= w_1 \\ 2c_2 + 2c_3 &= w_2 \\ 3c_3 &= w_3, \end{aligned}$$

which has the coefficient matrix

$$A = \begin{bmatrix} 1 & 1 & 1 \\ 0 & 2 & 2 \\ 0 & 0 & 3 \end{bmatrix}.$$

By Theorem 5 of Section 2.5 there is a unique solution to this system if the row-reduced echelon form of A is the identity matrix I. Performing the row-reduction we see that this is indeed the case, so $\mathcal{T}$ spans $\mathbf{R}^3$. Moreover, in doing the row-reduction and obtaining the identity matrix, we have also shown that $\mathcal{T}$ is linearly independent (Theorem 4 of Section 4.1). Consequently $\mathcal{T}$ is a basis for $\mathbf{R}^3$.

Now suppose that we wish to find a basis for the subspace $\mathbf{S}$ generated by a set, $\mathcal{T}$, of vectors in $\mathbf{S}$. By definition $\mathcal{T}$ spans $\mathbf{S}$, but $\mathcal{T}$ is not necessarily linearly independent. The following theorem and accompanying procedure show us how to *reduce a spanning set to a basis*.